



Memorandum For Record

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Date: February 25, 2020
NTSB Accident Number: ERA19FA170

Cockpit Information:

Altimeter faceplate – needle missing 29.90
Pitch Trim Indicator – Full nose down
Pilot's seat tracks - Separated and fractured. Both pilot and co-pilot's seats separated
Separated tachometer - separated needle. Faceplate exhibited a linear gouge in line with the needle attach point was noted at 2,550 rpm. Recording tachometer time 4,770.3.
Separated tachometer – Faceplate exhibited a linear scar of the pointer end about 2,600 rpm.
Recording tachometer time 4770.43
GPS- Found with separated battery pack
Flap position indicator – Instrument separated and needle missing.
Left engine both magneto switches – Up
Right engine both magneto switches – Up
Left and Right Fuel Pump Switches – broken, unknown positions
Strobe and Position Lights – Both On
Instrument and Landing Light – Unknown
Battery/Master – Unknown
Left and Right Cowl Flap Controls – Both in (closed)
Left and Right Engine Alternate Air – Off
Wing Flap Switch – Unknown Position
All Engine Gauges – Unknown positions. Exhibited extensive impact damage
Co-Pilot's Circuit Breaker Panel – Destroyed
Avionics Master – Broken, unknown position
Vacuum Gauge – Instrument separated. Needle off scale low
Attitude Indicator – Destroyed
Electronics International Instrument – Faceplate in place but housing separated.
Throttle Quadrant – Separated from instrument panel. Left and Right throttle and propeller controls aft, left and right mixture control full rich
Pilot's Control Yoke – Neither horn fractured; yoke fractured at shaft attach

Both fuel selectors – Impact damaged and positions unknown

Examination of the left engine, S/N L-1578-55A revealed the crankshaft was fractured aft of the crankshaft flange, and extensive impact damage precluded rotation of the crankshaft. The nose section of the crankcase was fractured exposing the main bearing. The exhaust and induction systems were heavily crushed, and impact damage was noted to the fuel metering and ignition system components. Both magnetos were rotated by hand and produced spark at all terminals. Examination of the fuel servo revealed the hex plug was not marked with “G.” The hex plug was safety wired and was tightly secured to the cover. A gasket part number 2577258 was not beneath the hex plug. The outer nut on the fuel diaphragm stem was in place. The regulator section of the fuel servo was clean, and although the fuel inlet fitting was fractured, the inlet screen was clean. All fuel injector lines remained secured except the No. 2 cylinder which was impact damaged. The flow divider diaphragm was intact and some residual fuel was noted inside. The fuel pump was examined and residual fuel was found inside. No signs of lubrication distress was noted and examination of the crankshaft through the bottom crankcase halves revealed no discrepancies. The top spark plugs exhibited normal color and wear. The governor was rotated by hand.

Examination of the right engine S/N RL-2651-55E revealed extensive impact damage, including the lower part of the engine. A portion of the propeller hub remained attached to the crankshaft flange. Only slight rotation of the crankshaft could be attained. Both magnetos, the fuel servo, and governor were extensively impact damaged; the damage to the magnetos precluded operational testing by hand. Examination of the fuel servo revealed the regulator section was impact damaged and partially separated from the housing. The fuel diaphragm stem was bent and fractured. The servo fuel inlet screen was clean and the hex plug was marked with “G.” The top spark plugs exhibited normal color and wear. The engine-driven fuel pump cover was impact damaged and following removal of the cover dirt was not inside. The flow divider diaphragm was OK, and some residual fuel consistent with 100LL was noted inside. There was no signs of lubrication distress and examination of the crankshaft through the bottom crankcase halves revealed no discrepancies. The governor was rotated by hand.

The attached blade of the left propeller exhibited an aft bend about 30° beginning about 24 inches from the hub while the leading edge of the other blade was twisted towards low pitch, was bent aft and missing about 1 inch. Both blades of the right propeller were missing sections that were not recovered. One blade of the right propeller was attached while the other blade was the other was separated from the hub. The attached and separated blades measured about 24 inches from the hub, and both exhibited “S” bending. The separated blade exhibited a large gouge on the trailing edge.

The emergency locator transmitter (ELT) was separated from structure but a portion of the antenna remained connected to the ELT; the remote was separated. The ELT was ACK Technologies E-04, which transmits on 406/121.5 MHz. The battery pack expired February 10, 2021. The ELT switch was armed and was turned off post-accident.

Components of the autopilot system were located including the servos, and mode controllers; impact damage was noted.

The farthest identified piece associated with the main wreckage site consisted of a vent located at 26.20241° north and -081.707175 west.

Examination of the recovered wreckage revealed the cabin entry door and baggage door were extensively impact damaged, but exhibited no evidence of preimpact failure or malfunction. The baggage door remained connected to structure at both hinges; the latch remained in the locked position. Examination of the cabin entry door revealed it was fragmented in multiple pieces and the window was completely separated. The upper door latch handle was separated. The lower portion of the door was separated at both hinges and was “U” shaped. The upper part of the door exhibited a semi-circular indentation on the leading edge. The upper door latch was in the unlatched position and the door hook was not fractured. The lower and upper aft door latches were extended. The lower inner door handle section latch assembly was in the closed position.